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Describes a method for evaluation of demolition and demolition equipment operational and functional performance characteristics. Identifies supporting tests, facilities, and equipment required. Provides procedures for functional performance tests. Applicable to non-nuclear devices.			

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Blasting Cap						
Fuze						
Explosives						
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U. S. ARMY TEST AND EVALUATION COMMAND
SYSTEMS SERVICE TEST OPERATIONS PROCEDURES

AMSTE-RP-702-103

*Test Operations Procedure 4-3-149

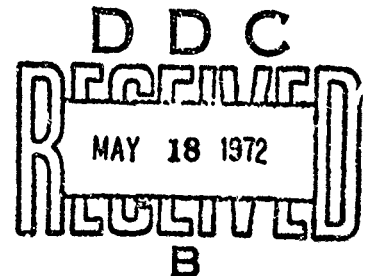
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DEMOLITION AND DEMOLITION EQUIPMENT

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SECTION I.
GENERAL

1. Purpose and Scope. This TOP is to be used to test demolitions and demolition equipment. Demolition equipment encompasses explosive initiating systems and ignition devices, electric and non-electric, and tools necessary to prepare demolitions for service. This TOP is limited to non-nuclear devices.
2. Background. The U.S. Army has established a requirement for demolitions and demolition equipment to be used in military demolition operations. Employed both offensively and defensively they are used for such tasks as the destruction of bridges, the removal of enemy barriers to facilitate advance, the construction of friendly barriers to delay or restrict enemy movement, to harass, and in military construction operations.
3. Equipment and Facilities. This TOP requires a test area suitable for demolition operations with adequate safety facilities. Specific requirements are described in the publications listed in Section II below.



*This TOP supersedes MTPs 4-3-045, 4-3-047, 4-3-048, 4-3-082 dated 16 April 1971, 19 May 1971, 15 July 1971, 1 July 1971, respectively.

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SECTION II TEST PROCEDURES

4. Supporting Tests. Common Service TOPs, Field Manuals, Technical Manuals and the tests defined in Section III to be considered in formulating a service test plan are as follows:

<u>TEST SUBJECT TITLE</u>	<u>PUBLICATION NO.</u>
a. Operator Training and Familiarization	10-3-501
b. Safety Hazards	2-3-501
c. Physical Characteristics	9-3-500
d. Technical Inspection	9-3-508
e. Functional Suitability, Demolitions, and Demolition Equipment (refer to para 5)	
f. Surface Transportability (Vehicles)	2-3-519
g. Human Factors Engineering	2-3-516
h. Maintainability	2-3-502
i. Maintenance Evaluation-Tools and Test Equipment	2-3-527
j. Maintenance Evaluation-Technical Manuscripts and Manuals	2-3-528
k. Reliability	2-3-507
l. Demolition Materials	TM 9-1375-200
m. Explosives and Demolitions	FM 5-25

SECTION III SUPPLEMENTARY INSTRUCTIONS

5. Functional Suitability, Demolitions, and Demolition Equipment

a. Objective. To determine the suitability of the test item(s) for incorporation into U.S. Army demolition operations or for purposes in accordance with the MN or other approved criteria.

<div style="font-size: 2em;">A</div>	BY	DATE	TIME
	DESTRUCTION/DEMOLITION/REPAIR		
<div style="font-size: 2em;">B</div>	TEST	DATE	TIME
	DESTRUCTION/DEMOLITION/REPAIR		
<div style="font-size: 2em;">C</div>	TEST	DATE	TIME
	DESTRUCTION/DEMOLITION/REPAIR		
<div style="font-size: 2em;">D</div>	TEST	DATE	TIME
	DESTRUCTION/DEMOLITION/REPAIR		

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b. Method

(1) For demolitions, the test item is set up and primed to perform a specific task (i.e., timber cutting charge), using a specific charge formula and techniques defined in FM 5-25. This procedure is repeated to accommodate all the basic military demolition operations defined in FM 5-25 and using various firing devices and systems to detonate the test item. A specified percentage is conducted during the hours of darkness using artificial light. Also, a specified percentage of the operations in the operational modes (above ground, underground, underwater), considered within the limits of the test item specifications or other approved criteria, are conducted.

(2) For demolition equipment, the test item is employed as defined by its functional role (i.e., fuze, explosive initiating or ignition device), using procedures defined in FM 5-25 or TM 9-1375-200. Test item compatibility with different explosives, ignition devices, fuzes or other items which are employed with the test item or necessary for its functioning by substituting these items in the firing chain and initiating action is examined. These tests are repeated under various atmospheric conditions and operational modes (above ground, underground, underwater) as considered within the limits of the test item specifications or other approved criteria. A specified percentage is conducted during hours of darkness using artificial light. These tests are repeated to determine the effect of burial in the ground or submersion in water for a specified period of time, if not scheduled during engineering and environmental testing.

(3) Demolitions and demolition equipment failures are investigated for cause and effect. Observations of the climatic conditions prevailing during field tests at the test site are made to provide a record for future evaluation.

c. Data Required.

- (1) Nomenclature of test item.
- (2) Description of test set up (to include computations of charges for demolitions).
- (3) Times required for test item employment.
- (4) Measurements of operational characteristics necessary to satisfy suitability requirements of the approved criteria.
- (5) Difficulties encountered during operation.
- (6) Climatic conditions (temperature, humidity, etc.).
- (7) Deficiencies and shortcomings observed.

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(8) Remarks concerning operation of the test item.

d. Analytical Plan. At the completion of data collection phases, test results are evaluated to determine whether or not the test item meets the stated performance requirements.

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